INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR2004/001210

Box No. I Nucleotide and/or amino acid sequence(s) (Continuation of item1.b of the first sheet)

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, the international search was carried out on the basis of :

   a. type of material

   [X] a sequence listing

   [ ] table(s) related to the sequence listing

   b. format of material

   [X] in written format

   [X] in computer readable form

   c. time of filing/furnishing

   [X] contained in the international application as filed

   [X] filed together with the international application in computer readable form

   [ ] furnished subsequently to this Authority for the purposes of search

2. [ ] In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

3. Additional comments:

INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR2004/001210

A. CLASSIFICATION OF SUBJECT MATTER

IPC7 C12N 1/21

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7 C12N 1/21, C12P 1/04, 7/46

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean patents and applications for inventions since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKIPASS, PubMed, CA, 'succinic acid', 'Mannheimia', 'rumen bacterium'

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	Lee, P.C. et al., 'Isolation and characterization of a new succinic acid-producing bacterium, Mannheimia succiniciproducens MBEL55E, from bovine rumen', Appl. Microbiol. Biotechnol., 58: 663-668, Feb. 08, 2002. See the whole document.	1-30
A	Lee, P.C. et al., 'Batch and continuous cultures of Mannheimia succiniciproducens MBEL55E for the production of succinic acid from whey and corn steep liquor', Bioprocess. Biosyst. Eng., 26: 63-67, Oct. 03, 2003. See the whole document.	1-30
A	KR 2002-0003712 (BIOINFOMETICS co.), Jan. 15, 2002. See the whole document.	1-30
A	KR 1999-0014331 (KIST), Feb. 25, 1999. See the whole document.	1-30
A	US 5,521,075 (Michael V. Guettler), May. 28, 1996. See the whole document.	1-30
A	US 5,143,833 (Datta, Rathin), Sep. 01, 1992. See the whole document.	1-30

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents,such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
14 SEPTEMBER 2004 (14.09.2004)	**14 SEPTEMBER 2004 (14.09.2004)**

Name and mailing address of the ISA/KR	Authorized officer
Korean Intellectual Property Office 920 Dunsan-dong, Seo-gu, Daejeon 302-701, Republic of Korea Facsimile No. 82-42-472-7140	LEE, CHUNG HO Telephone No. 82-42-481-8160

INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR2004/001210

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
KR 2002-0003712 A	2002.01.15.	none	
KR 1999-0014331 A	1999.02.25.	WO 1999/006532 A1 US 6,448,061 EP 0990025 A1	1999.02.11. 2002.09.10. 2000.04.05.
US 5,521,075 A	1996.05.28.	none	
US 5,143,833 A	1992.09.01.	EP 0405707 A1 JP 62294090 A2 US 5,168,055	1991.01.02. 1987.12.21. 1992.12.01.

BUDAPEST TREATY ON THE INTERNATIONAL RECOGNITION OF THE DEPOSIT OF MICROORGANISMS FOR THE PURPOSE OF PATENT PROCEDURE

INTERNATIONAL FORM

RECEIPT IN THE CASE OF AN ORIGINAL DEPOSIT

issued pursuant to Rule 7.1

TO : LEE, Sang Yup
Korea Advanced Institute of Science and Technology,
#373-1, Kuseong-dong, Yuseong-gu, Daejeon 305-701,
Republic of Korea

I. IDENTIFICATION OF THE MICROORGANISM	
Identification reference given by the DEPOSITOR: ***Mannheimia* sp. LPK**	Accession number given by the INTERNATIONAL DEPOSITARY AUTHORITY: **KCTC 10558BP**

II. SCIENTIFIC DESCRIPTION AND/OR PROPOSED TAXONOMIC DESIGNATION

The microorganism identified under I above was accompanied by:
[x] a scientific description
[ ] a proposed taxonomic designation
(Mark with a cross where applicable)

III. RECEIPT AND ACCEPTANCE

This International Depositary Authority accepts the microorganism identified under I above, which was received by it on **November 26 2003.**

IV. RECEIPT OF REQUEST FOR CONVERSION

The microorganism identified under I above was received by this International Depositary Authority on and a request to convert the original deposit to a deposit under the Budapest Treaty was received by it on

V. INTERNATIONAL DEPOSITARY AUTHORITY	
Name: **Korean Collection for Type Cultures** Address: Korea Research Institute of Bioscience and Biotechnology (KRIBB) #52, Oun-dong, Yusong-ku, Taejon 305-333, Republic of Korea	Signature(s) of person(s) having the power to represent the International Depositary Authority of authorized official(s): PARK Yong-Ha, Director Date: **November 28 2003**

Form BP/4 (KCTC Form 17)

sole page

BUDAPEST TREATY ON THE INTERNATIONAL RECOGNITION OF THE DEPOSIT OF MICROORGANISMS FOR THE PURPOSE OF PATENT PROCEDURE

INTERNATIONAL FORM

RECEIPT IN THE CASE OF AN ORIGINAL DEPOSIT

issued pursuant to Rule 7.1

TO : LEE, Sang Yup
Korea Advanced Institute of Science and Technology,
#373-1, Kuseong-dong, Yuseong-ku, Daejeon 305-701,
Republic of Korea

I. IDENTIFICATION OF THE MICROORGANISM

Identification reference given by the DEPOSITOR:	Accession number given by the INTERNATIONAL DEPOSITARY AUTHORITY:
***Mannheimia* sp. LPK7**	**KCTC 10626BP**

II. SCIENTIFIC DESCRIPTION AND/OR PROPOSED TAXONOMIC DESIGNATION

The microorganism identified under I above was accompanied by:
[x] a scientific description
[ ] a proposed taxonomic designation
(Mark with a cross where applicable)

III. RECEIPT AND ACCEPTANCE

This International Depositary Authority accepts the microorganism identified under I above, which was received by it on **April 22 2004.**

IV. RECEIPT OF REQUEST FOR CONVERSION

The microorganism identified under I above was received by this International Depositary Authority on and a request to convert the original deposit to a deposit under the Budapest Treaty was received by it on

V. INTERNATIONAL DEPOSITARY AUTHORITY

Name: **Korean Collection for Type Cultures**

Address: Korea Research Institute of Bioscience and Biotechnology (KRIBB)
#52, Oun-dong, Yusong-ku,
Taejon 305-333,
Republic of Korea

Signature(s) of person(s) having the power to represent the International Depositary Authority of authorized official(s):

PARK, Yong-Ha Director
Date: **April 27 2004**